Water Quality
Supplement 5.6

Station #3: pH
Work Sheet

Background
pH is an indicator of the acid content of water. The pH scale ranges from 1 (acid) to 14 (alkaline or base) with 7 as neutral. The scale is logarithmic, so a change of one pH unit means a tenfold change in acid or alkaline concentration. For instance, a change from 7 to 6 represents a solution 10 times more acidic; a change from 7 to 5 is 100 times more acidic, and so on. The lower the pH, the more acid the water. The pH of a water body has a strong influence on what can live in it. Immature forms of salamanders, frogs and other aquatic life are particularly sensitive to low pH.

Procedure
- Without calibrating the pH pen, but following the steps for the pen given in the *pH Procedure*, take turns measuring the pH of a different water sample. Record these numbers.
- Calibrate the pH pen and repeat the measurements again carefully following the procedure to avoid contaminating samples. Alternatively, students could use one calibrated pen and one that has not been calibrated, if there is enough equipment. Record your readings.
- Compare the data obtained using different methods. Discuss possible reasons for the differences.
- Take the pH of familiar liquids, such as distilled water, vinegar, tap water, milk, juice, soda pop, etc., using the uncalibrated pH pens and the calibrated pH pens.
- List the samples you checked and record the pH obtained by the different methods. Use the chart below as an example. Which method gave the most accurate results? The most reliable?
- Create a pH scale and plot the average values obtained for each sample.

Sample Tested	Uncalibrated pH Pen	Calibrated pH Pen